

**WHAT IS CLAIMED IS:**

1           1. A device for insertion into a standard tape player having a  
2 plurality of conventional user controls comprising:

3           a removable storage device for storing digital signals  
4 representing audio information, an insertion port for receiving said  
5 storage device;

6           an interface embodied in said housing for converting digital  
7 signals to magnetic signals which are presented to said tape player;  
8 and

9           a processor, said processor interpreting user actuation of at  
10 least one of said tape player user controls as a command to control  
11 the presentation of said audio information in a predetermined manner  
12 to thereby provide the user with the ability to control the presentation  
13 of said audio information in a manner not available when using said  
14 standard tape player with standard magnetic media.

1           2. A device according to claim 1, wherein said audio  
2 information includes a plurality of musical performances and the  
3 presentation of said musical performances is controlled to present a  
4 user specified musical performance.

1           3. A device according to claim 2, wherein said user specified  
2 musical performance is specified by advancing to the next  
3 performance.

1           4. A device according to claim 2, wherein said user specified  
2 musical performance is specified by musical performance number.

1           5. A device according to claim 2, wherein said user specified  
2 musical performance is specified by the user in response to an audio  
3 message.

1           6. A device according to claim 1, further including a plurality  
2 of sensors for detecting the state of said tape player.

1           7. A device according to claim 1, wherein said processor is  
2 operable to decrypt said digital signals.

1           8. A device according to claim 1, wherein said processor is  
2 operable to check whether the digital information may be validly  
3 presented to said user.

1           9. A device according to claim 1, further including a connector  
2 for connecting said device to an external speaker, said processor  
3 being operable to control operation in a cassette emulator mode and  
4 in an audio player mode independent of said standard tape player.

1        10. A device for insertion into a standard audio tape player  
2        having a plurality of conventional user controls comprising:

3            a housing having substantially the same physical dimensions  
4        as a standard audio cassette;

5            a removable storage device embodied in said housing for  
6        storing digital information representing a plurality of musical  
7        performances, said housing including an insertion port for receiving  
8        said removable storage device;

9            an interface embodied in said housing for converting digital  
10       information to magnetic signals which are presented to said audio  
11       tape player; and

12           a processor, said processor being responsive to user actuation  
13       of at least one of said audio tape player user controls to select a  
14       desired one of said plurality of musical performances for playback.

1        11. A device according to claim 10, wherein said processor is  
2        operable to decrypt said digital information.

1        12. A device according to claim 10, wherein said processor is  
2        operable to check whether the digital information may be validly  
3        presented to said user.

1        13. A device according to claim 10, further including a  
2 connector for connecting said device to an external speaker, said  
3 processor being operable to control operation in a cassette emulator  
4 mode and in an audio player mode independent of said audio tape  
5 player.

1        14. A device for insertion into an audio tape player having a  
2 plurality of user controls and for responding to user actuation of one  
3 of said controls to place said audio tape player in a state to initiate a  
4 selected operation when a conventional audio cassette has been  
5 inserted into said player, said device comprising:

6            a removable storage device for storing digital information  
7 representing audio information;

8            an insertion port having a cavity for receiving said removable  
9 storage device;

10           an interface for converting digital information read out of said  
11 storage device to magnetic signals which are presented to said audio  
12 tape player;

13           a plurality of sensors to detect the state of said audio cassette  
14 player; and

15 a processor responsive to the state of at least one of said  
16 plurality of sensors for controlling said device to initiate an operation  
17 emulating the user selected operation on said audio cassette player.

1 15. A device according to claim 14, wherein said plurality of  
2 sensors includes a transducer carriage position sensor.

1 16. A device according to claim 14, wherein said plurality of  
2 sensors includes a tape player pinch roller sensor.

1 17. A device according to claim 14, wherein said plurality of  
2 sensors includes spindle wheel sensor.

1 18. A device according to claim 14, wherein said plurality of  
2 sensors includes a tape player erase head sensor.

1 19. A device according to claim 14, wherein said processor is  
2 operable to decrypt said digital information.

1 20. A device according to claim 14, wherein said processor is  
2 operable to check whether the digital information may be validly  
3 presented to said user.

1 21. A device according to claim 14, further including a  
2 connector for connecting said device to an external speaker, said  
3 processor being operable to control operation in a cassette emulator

4 mode and in an audio player mode independent of said audio tape  
5 player.

1 22. In an interface device for transferring digital data to  
2 equipment designed to process signals from magnetic storage media,  
3 the method comprising the steps of:

4 storing digital information in a removable storage device;

5 inserting the removable storage device in an insertion port in  
6 said interface device;

7 inserting the interface device into the equipment;

8 converting the digital data to magnetic signals which are  
9 presented to the equipment's magnetic sensors;

10 detecting with a plurality of sensors changes in operation of the  
11 equipment intended to control the magnetic media; and

12 altering the presentation of the magnetic signals in response to  
13 detected changes in operation of the equipment.

1 23. The method according to claim 22, whereby the step of  
2 detecting changes in operation includes the step of detecting at least  
3 the change to paused motion.

1        24. The method according to claim 22, whereby the step of  
2        detecting changes in operation includes the step of detecting at least  
3        the change to stopped motion.

1        25. The method according to claim 22, whereby the step of  
2        detecting changes in operation includes the step of detecting at least  
3        the change from no motion to standard forward operation.

1        26. The method according to claim 22, wherein said altering  
2        step in response to said detecting step detecting a change in the  
3        operation of the equipment, includes the step of suspending  
4        processing further digital information.

1        27. The method according to claim 22, wherein said processor  
2        uses a position pointer to identify digital information for processing  
3        and presentation to a user and wherein said altering step, in response  
4        to said detecting step detecting a change in the operation of the  
5        equipment, includes the step of the processor repositioning said  
6        pointer to identify different digital information for processing and  
7        presentation.

1        28. The method according to claim 22, wherein said altering  
2        step in response to said detecting step detecting a change in the  
3        operation of the equipment, includes the step of generating an user

4 message signal by the device as magnetic signals and transmitting  
5 said magnetic signals to the equipment.

1 29. A method according to claim 22, further including the  
2 steps of connecting said device to an external speaker, and  
3 controlling operation by said processor in an audio player mode  
4 independent of said audio tape player.

1 30. In an interface device for transferring digital data to  
2 equipment designed to process magnetic storage media signals and  
3 having a plurality of user controls, the method comprising the steps  
4 of:

5 storing in the device digital information relating to audio  
6 information to be presented to a user;

7 inserting the device into the equipment;

8 converting the digital information to magnetic signals which  
9 are presented to the equipment's magnetic sensors;

10 detecting changes in operation of the equipment intended to  
11 control the magnetic media; and

12 generating an audio message relating to the presentation of  
13 said audio information in response to the user actuating at least one  
14 of said user controls.



1        31. A method according to claim 30, wherein said audio  
2 message is an announcement of the amount of time which has been  
3 skipped forward.

1        32. A method according to claim 30, wherein said audio  
2 message is an announcement of the amount of time which has been  
3 skipped backward.

1        33. A method according to claim 30, wherein said audio  
2 message is an announcement of the relative performance completed  
3 with respect to the start of the performance presentation.

1        34. A method according to claim 30, wherein said audio  
2 message relates to an announcement relating to the relative media  
3 position with respect to the start of the performance.

1        35. A method according to claim 30, wherein said audio  
2 message is an announcement relating to the media position relative to  
3 when normal play last stopped.

1        36. A method according to claim 30, wherein said audio  
2 message is an announcement that the transmission has been paused.

1        37. A method according to claim 30, wherein said audio  
2 message is an announcement that the information is positioned to  
3 start back at the beginning of the performance presented to the user.

1        38. A method according to claim 30, wherein said audio  
2 message is generated by the device.

1        39. A method according to claim 30, wherein said audio  
2 message is derived from information that has been prestored in a  
3 digital memory embodied in the device.

1        40. The method according to claim 30, wherein the equipment  
2 includes a fast forward control and further including the step of  
3 generating magnetic signals in response to the actuation of said fast  
4 forward control by generating audio sounds that occur at a relatively  
5 rapid rate.

1        41. The method according to claim 30, wherein the equipment  
2 includes a reverse control and further including the step of generating  
3 magnetic signals in response to user actuation of the reverse control  
4 by processing digital information to be presented successively earlier  
5 in time.

1        42. A method according to claim 30, further including the  
2 steps of connecting said device to an external speaker, and  
3 controlling operation in an audio player mode independent of said  
4 audio tape player.

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